

Appl. No. 10/071,678
Reply to Office action of April 12, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): An apparatus for adhering paint chips ~~in rows on~~ sheets at predetermined locations thereon, the apparatus comprising:

a plurality of stations including at least one an adhesive applying station upstream from swatch applying stations that deposit paint chips onto adhesive transferred to the sheets at the adhesive station;

a conveyor for advancing the sheets sheet from upstream to downstream through the plurality of stations;

a sheet feeder upstream of the conveyor for sequentially supplying the sheets to the conveyor;

a at least two gripping mechanism mechanisms connected to the conveyor and having an open state facing upstream for receiving sheets and a closed state for holding sheets received therein, the gripping mechanisms laterally disposed from each other along an axis perpendicular to the direction of the downstream advancement of the sheets;

an elongated support surface extending from the sheet feeder downstream; and

a drive system for the conveyor and sheet feeder that coordinates timing of the supply of the sheets by the sheet feeder to the gripping mechanism mechanisms so that the gripping mechanisms shift mechanism shifts between the open and closed states ~~thereof~~ as the an individual sheet is received therein with the gripping mechanism mechanisms closing onto a downstream leading edge of the received sheet to for substantially ~~maintain the leading edge of the sheet in a generally constant orientation~~ reducing sheet float when the individual sheet is pulled generally in a plane over the support surface from upstream to downstream without opening the mechanisms as the individual sheet is pulled for pulling the sheet downstream through the stations without interfering with operations of the adhesive applying station and swatch applying stations.

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Claim 2 (Currently Amended): The apparatus of claim 1 wherein the gripping mechanisms include ~~mechanism includes~~ pivotal members having ends that are pivoted away from each other in the open state to face upstream toward the sheet feeder, the ends being pivoted toward each other in the closed state to clamp onto the individual sheet for pulling the individual sheet downstream ~~on the conveyor~~.

Claim 3 (Currently Amended): The apparatus of claim 2 ~~4~~ wherein the conveyor is an endless conveyor for moving the sheets having a downstream travel path between a sheet supply end and a sheet discharge end with the stations therebetween, and opening mechanisms at ~~predetermined~~ positions at the sheet supply and discharge ends of the endless conveyor which cooperate with the gripping mechanisms ~~mechanism~~ to shift the gripping mechanisms ~~mechanism~~ to the open state for receiving the individual sheet ~~sheets~~ at the supply end and for releasing the sheets at the discharge end.

Claim 4 (Currently Amended): The apparatus of claim 3 ~~4~~ wherein the gripping mechanisms ~~mechanism includes~~ include pivotal members, and ~~a~~ at least one cam mechanism at a ~~predetermined~~ position along the conveyor adjacent the sheet feeder for pivoting the gripping mechanisms ~~mechanism members to~~ the open state as ~~an incidence of the travel of the gripping~~ mechanisms travel ~~mechanism attached to the conveyor past the cam mechanism~~.

Claim 5 (Currently Amended): The apparatus of claim 4 ~~4~~ wherein the gripping mechanisms include ~~mechanism includes~~ a biasing mechanism for urging the pivotal members to the closed state with a ~~predetermined~~ bias force to securely hold the individual sheets received therein with the cam mechanism being operable to shift the pivotal members to the open state against the ~~predetermined~~ bias force.

Claim 6 (Currently Amended): The apparatus of claim 5 ~~4~~ wherein the conveyor further includes ~~an upstream end adjacent the sheet feeder and~~ lateral guides downstream of the sheet feeder at the upstream end of the conveyor, the lateral guides

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~~that are adjustable to align the individual sheets received from the feeder on the conveyor for downstream travel of the individual sheets through the stations with the gripping mechanisms mechanism operable between the guides to hold the individual sheets and pull the aligned sheets through the stations without need for additional guides associated with the stations.~~

Claim 7 (Currently Amended): An apparatus for adhering swatches ~~in rows on~~ individual sheets at predetermined locations thereon, the apparatus including:

~~an~~ at least one adhesive applying station for depositing adhesive on the individual sheets at predetermined locations on the sheet;

one or more swatch applying stations for placing swatches on the adhesive at the predetermined locations on the sheet;

an elongated support surface extending from upstream to downstream;

at least two sets of gripping jaws, each set having an upper and lower a single set of sheet engaging gripping jaw members associated with a sheet for advancing pulling a downstream leading edge of the sheet through and under the adhesive applying station and the swatch applying stations, each set of gripping jaws being disposed laterally from each other along an axis perpendicular to the elongated support surface, the gripping jaws shifting between the open and closed states as the individual sheet is received therein with the gripping jaws closing onto the downstream edge of the received sheet for substantially reducing sheet float when the individual sheet is pulled generally in a plane over the support surface from upstream to downstream without opening the jaws as the individual sheet is pulled through and under the adhesive applying station and the swatch applying stations the sheet engaging members having low profiles so as to fit between closely spaced operating members in operating areas of the adhesive applying station and the swatch applying stations.

Claim 8 to Claim 17 (Canceled).

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Claim 18 (Currently Amended): An apparatus for moving a sheet through machinery for applying swatches to sheets in a machine feed direction, the apparatus comprising:

a feeding station for separating where a an individual sheet is separated from a plurality of sheets in a stack and feeding the separated individual sheet;

an endless flexible drive a chain;

an elongated sheet support surface extending from the upstream to the downstream for support of the sheet while traveling downstream;

at least two pairs of gripping jaws affixed to the endless flexible drive, the gripping jaws facing upstream a gripper mechanism disposed on the chain adapted for gripping an upstream edge of the sheet;

an adhesive applying station for applying glue to the sheet;

one or more swatch applying stations each having one or more operating cylinders having an axis of rotation perpendicular to the machine feed direction for applying one or more swatches to the sheet; and

a receiving station for receiving the sheet after the sheet has been through the adhesive applying station and the swatch applying station;

wherein each of the at least two pairs of the gripping jaws pivoting on a pivot axis perpendicular to the movement of the sheet moving downstream the jaws pivoting to gripper mechanism has an open position and a closed position;

each pair of the gripping jaws being disposed laterally from each other along an axis perpendicular to the elongated sheet support surface; and

wherein the gripping jaws gripper mechanism in the closed position for pulling pulls the sheet by a leading the downstream edge of the sheet from the feeding station downstream through the adhesive applying station and through the swatch applying station to the receiving station, the gripping jaws gripper mechanism passing beneath at least one of the one or more operating cylinders of at least one of the one or more swatch applying stations.

Claim 19 (Currently Amended): The apparatus Apparatus in accordance with claim 18 wherein the gripping jaws are gripper mechanism includes an upper jaw and a lower jaw pivotally hinged together by a pivot pin which has it longitudinal axis

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perpendicular to the downstream movement of the sheet.

Claim 20 to Claim 21 (Cancel)

Claim 22 (Currently Amended): The apparatus Apparatus in accordance with claim 18 wherein the endless flexible drive is a chain and the apparatus further includes ~~revolves around a~~ forward gear with a cam ~~thereby by~~ downstream and adjacent to the feeding station and a rearward gear with a cam upstream and adjacent to ~~thereby by~~ the receiving station, the chain revolving the forward and rearward gears, the cams operably connected to the jaws to close the jaws at the forward gear and open the jaws and the rearward gear.

Claim 23 (Currently Amended): The apparatus Apparatus in accordance with claim 22 wherein each pair of the gripping jaws include a lower jaw and upper jaw, the lower jaw pivots about the pivot axis relative to the upper jaw to bring the gripper mechanism gripping jaws from a closed position to the open position during contact with the cam by the forward gear or the rearward gear.

Claim 24 (Currently Amended): The apparatus Apparatus in accordance with claim ~~23~~ 24 wherein each pair of the gripping jaws are ~~gripper mechanism is~~ biased towards the closed position by a spring, wherein the a gripping arm extending from of the upper jaw contacts the a gripping tab extending from of the lower jaw when the gripping jaws are gripper mechanism is in the closed position.

Claim 25 (Cancel)

Claim 26 (Currently Amended): The apparatus Apparatus in accordance with claim ~~18~~ 25 wherein the elongated support surface plates includes ~~are arranged with~~ slots in which for the gripping jaws travel downstream ~~gripper mechanism to protrude~~ through.

Claim 27 to Claim 32 (Cancel)

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Claim 33 (New): The apparatus in accordance with claim 7 wherein the gripping jaws are hinged together by a pivot pin which has its longitudinal axis perpendicular to the downstream movement of the sheet.

Claim 34 (New): The apparatus in accordance with claim 33 wherein the apparatus further includes an endless flexible drive for moving the gripping jaws downstream, a feeding station for separating an individual sheet from a plurality of sheets in a stack and feeding the separated individual sheet, a receiving station for receiving the sheet after the sheet has been through the adhesive applying station and swatch applying station, a forward gear with a cam downstream and adjacent to the feeding station and a rearward gear with a cam upstream and adjacent to the receiving station, the flexible drive revolving the forward and rearward gears, the cams operably connected to the jaws to close the jaws at the forward gear and open the jaws and the rearward gear.

Claim 35 (New): The apparatus in accordance with claim 34 wherein the lower gripping jaw pivots about the pivot axis relative to the upper jaw to bring the gripping jaws from a closed position to the open position during contact with the cam by the forward gear or the rearward gear.

Claim 36 (New): The apparatus in accordance with claim 33 wherein the gripping jaws are biased towards the closed position by a spring, wherein a gripping arm extending from the upper jaw contacts a gripping tab extending from the lower jaw when the gripping jaws are in the closed position.

Claim 37 (New): The apparatus in accordance with claim 35 wherein the gripping jaws are biased towards the closed position by a spring, wherein a gripping arm extending from the upper jaw contacts a gripping tab extending from the lower jaw when the gripping jaws are in the closed position.

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Claim 38 (New): The apparatus in accordance with claim 7 wherein the elongated support surface supports the sheet as the gripping jaws pull the sheet downstream, the elongated support surface including slots in which the gripping jaws travel downstream.

Claim 39 (New): The apparatus in accordance with claim 33 wherein the elongated support surface supports the sheet as the gripping jaws pull the sheet downstream, the elongated support surface including slots in which the gripping jaws travel downstream.